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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,049	09/28/2001	Fritz A. Boehm	31876.0263	5410
23309	7590	07/25/2005		
Matthew J. Booth & Associates, PLLC P O BOX 50010 AUSTIN, TX 78763-0010			EXAMINER STEVENS, THOMAS H	
			ART UNIT 2123	PAPER NUMBER

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/966,049

Applicant(s)

BOEHM, FRITZ A.

Examiner

Thomas H. Stevens

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/28/01.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Claims 1-14 were examined.

#### ***Specification (Abstract)***

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 2, 6-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2: The word system is ambiguous since a system pertains to a method or an apparatus. Claim 6: Examiner assumes claim 6 is an apparatus claim, which unclear, but is also linked to independent system claim 2 and independent method claims 3 and 4. Claims 7-9: The statutory type is unclear.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Weber et al., (U.S. Patent 6,889,180 (2005)). Weber et al., discloses monitoring (column 5, lines 35-43) a design verification (column 8, lines 2-5) event and reports a status event to a database (column 1, lines 23-25) (abstract).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed

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but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claim 1. A grid that monitors (column 5, lines 35-43) a design simulation (column 7, lines 34-44) to support design verification (column 8, lines 2-5) coverage analysis, comprising; a monitor ( column 5, lines 35-43) declaration (column 5, lines 33-41) that provides a unique name for the grid; n ordered axis declarations (column 5, lines 33-41) wherein n is at least 1, each said axis declaration (column 5, lines 33-41) names an axis comprising a first axis through a nth axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states (column 4, lines 12-31) of said functional attribute and has a corresponding axis variable; one or more logic expressions that evaluate whether the design has achieved one or more of said functional states (column 4, lines 12-31), said logic expressions set each one of said n axis variables to an integer value corresponding to said functional state when said logic expressions evaluate true; and a grid declaration (column 5, lines 33-41) that converts said n axis variables to a unique linear index value that corresponds to the cross-product (column 5, lines 43-45) of said functional states (column 4, lines 12-31) achieved by the design, said grid declaration (column 5, lines 33-41) also records a hit at said unique linear index value.

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Claim 2. A system that monitors (column 5, lines 35-43) a design simulation (column 7, lines 34-44) using a grid to support design verification (column 8, lines 2-5) coverage analysis, comprising; a monitor ( column 5, lines 35-43) declaration (column 5, lines 33-41) that provides a unique name for the grid; n ordered axis declarations (column 5, lines 33-41) wherein n is at least 1, each said axis declaration (column 5, lines 33-41) names an axis comprising a first axis through a nth axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states (column 4, lines 12-31) of said functional attribute and has corresponding axis variable; one or more logic expressions that evaluate whether the design has achieved one or more of said functional states (column 4, lines 12-31), said logic expressions set each one of said n axis variables to an integer value corresponding to said functional state when said logic expressions evaluate true; and a grid declaration (column 5, lines 33-41) that converts said n axis variables to

to

a unique linear index value that corresponds to the cross-product (column 5, lines 43-45) of said functional states (column 4, lines 12-31) achieved by the design, said grid declaration (column 5, lines 33-41) also records a hit at said unique linear index value.

Claim 3. A method that makes a grid that monitors (column 5, lines 35-43) a design simulation (column 7, lines 34-44) to support design verification (column 8, lines 2-5) coverage analysis, comprising: providing a monitor ( column 5, lines

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35-43) declaration (column 5, lines 33-41) that provides a unique name for the grid; providing n ordered axis declaration (column 5, lines 33-41) wherein n is at least 1, each said axis declaration (column 5, lines 33-41) names an axis comprising a first axis through a nth axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states (column 4, lines 12-31) of said functional attribute and has a corresponding axis variable; providing one or more logic expressions that evaluate whether the design has achieved one or more of said functional states (column 4, lines 12-31), said logic expressions set each one of said n axis variables to an integer value corresponding to said functional state when said logic expressions evaluate true; and providing a grid declarations (column 5, lines 33-41) that converts said n axis variables to a unique linear index value that corresponds to the cross-product (column 5, lines 43-45) of said functional states (column 4, lines 12-31) achieved by the design, said grid declaration (column 5, lines 33-41) also records a hit at said unique linear index value.

Claim 4. A method that monitors (column 5, lines 35-43) a design simulation (column 7, lines 34-44) using a grid to support design verification (column 8, lines 2-5) coverage analysis, comprising: declaring a monitor ( column 5, lines 35-43) in a monitor ( column 5, lines 35-43) declaration (column 5, lines 33-41) that provides a unique name for the grid; declaring n ordered axes using axis declarations (column 5, lines 33-41), wherein n is at least 1, each said axis declaration (column 5, lines 33-41) names an axis comprising a first axis through

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a nth axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states (column 4, lines 12-31) of said functional attribute and has a corresponding axis variable; evaluating one or more logic expressions to determine whether the design has achieved one or more of said functional states (column 4, lines 12-31); setting each one of said n axis variables to an integer value corresponding to said functional state when said logic expressions evaluate true; and using a grid declaration (column 5, lines 33-41) to convert said n axis variables to a unique linear index value that corresponds to the cross-product (column 5, lines 43-45) of said functional states (column 4, lines 12-31) achieved by the design and to record a hit at said unique linear index value.

Claim 5. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method that monitors (column 5, lines 35-43) a design simulation using a grid to support design verification (column 8, lines 2-5) coverage analysis, comprising: declaring a monitor (column 5, lines 35-43) in a monitor (column 5, lines 35-43) declaration (column 5, lines 33-41) that provides a unique name for the grid; declaring n ordered axes using axis declaration (column 5, lines 33-41), wherein n is at least 1, each said axis declaration (column 5, lines 33-41) names an axis comprising a first axis through a nth axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states (column 4, lines 12-31) of said functional attribute and has a



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corresponding axis variable; evaluating one or more logic expressions to determine whether the design has achieved one or more of said functional states (column 4, lines 12-31); setting each one of said n axis variables to an integer value corresponding to said functional state when said logic expressions evaluate true; and using a grid declaration (column 5, lines 33-41) to convert said n axis variables to a unique linear index value that corresponds to the cross-product (column 5, lines 43-45) of said functional states (column 4, lines 12-31) achieved by the design and to record a hit at said unique linear index value.

Claim 6. A dependent claim according to Claim 1, 2, 3, 4 or 5 (column 5, lines 35-43; column 4, lines 12-31; column 8, lines 2-5; column 7, lines 34-44) wherein said grid declaration (column 5, lines 33-41) maintains a map of hits at each linear index value determined during a simulation, and downloads said map to a database (column 1, lines 23-25).

Claim 7. A dependent claim according to Claim 1, 2, 3, 4 or 5 (column 5, lines 35-43; column 4, lines 12-31; column 8, lines 2-5; column 7, lines 34-44) wherein said unique linear index value is determined by multiplying the integer value of each said axis variable except the nth said axis variable by the product of the sizes of each higher-order axis than the axis to which said axis variable corresponds, summing the results, and adding the integer value of the nth said axis variable.

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Claim 8. A dependent claim according to Claim 1, 2, 3, 4 or 5, wherein said monitor (column 5, lines 35-43) declaration (column 5, lines 33-41), said axis declaration (column 5, lines 33-41), said logic expressions, and said grid declaration (column 5, lines 33-41) are translated into a computer program comprising a higher-order software language (e.g., C++; column 8, lines 55-57) using a parser ( column 6, line 3 with figure 6 ):

Claim 9. A dependent claim according to Claim 8 wherein said parser (column 6, line 3 with figure 6) further translates each said unique linear index value to a character string comprising a concatenation of character strings that correlate to said grid name and to each said functional state within said cross-product (column 5, lines 43-45) achieved by the design.

Claim 10. A grid that monitors (column 5, lines 35-43)a design simulation (column 7, lines 34-44) to support design verification (column 8, lines 2-5) coverage analysis, comprising: a monitor (column 5, lines 35-43) declaration (column 5, lines 33-41) that provides a unique name for the grid; n ordered axis declaration (column 5, lines 33-41) wherein n is at least 1, each said axis declaration (column 5, lines 33-41) names an axis comprising a first axis through a nth axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states (column 4, lines 12-31) of said functional attribute and has a corresponding axis variable; one or more logic expressions that evaluate whether the design has achieved

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one or more of said functional states (column 4, lines 12-31), said logic expressions set each one of said n axis variables to an integer value corresponding to said functional state when said logic expressions evaluate true; a grid declaration (column 5, lines 33-41) that converts said n axis variables to a unique linear index value that corresponds to the cross-product (column 5, lines 43-45) of said functional states (column 4, lines 12-31) achieved by the design by multiplying the integer value of each said axis variable except the nth said axis variable by the product of the sizes of each higher-order axis than the axis to which said axis variable corresponds, summing the results, and adding the integer value of the nth said axis variable, said grid declaration (column 5, lines 33-41) also records a hit and maintains a map of hits at each linear index value determined during a simulation, and downloads said map to a database (column 1, lines 23-25); and a parser (column 6, line 3 with figure 6 ) that translates said monitor (column 5, lines 35-43) declaration (column 5, lines 33-41), said axis declaration (column 5, lines 33-41), said logic expressions, and said grid declaration (column 5, lines 33-41) into a computer program comprising a higher-order software language (column 8, lines 55-57), said parser (column 6, line 3 with figure 6 ) further translates each said unique linear index value to a character string comprising a concatenation of character strings that correlate to said grid name and to each said functional state within said cross-product (column 5, lines 43-45) achieved by the design.

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Claim 11. A system that monitors (column 5, lines 35-43) a design simulation (column 7, lines 34-44) using a grid to support design verification (column 8, lines 2-5) coverage analysis, comprising: a monitor (column 5, lines 35-43) declaration (column 5, lines 33-41) that provides a unique name for the grid; n ordered axis declaration (column 5, lines 33-41) wherein n is at least 1, each said axis declaration (column 5, lines 33-41) names an axis comprising a first axis through a nth axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states (column 4, lines 12-31) of said functional attribute and has a corresponding axis variable; one or more logic expressions that evaluate whether the design has achieved one or more of said functional states (column 4, lines 12-31), said logic expressions set each one of said n axis variables to an integer value corresponding to said functional state when said logic expressions evaluate true; a grid declaration (column 5, lines 33-41) that converts said n axis variables to a unique linear index value that corresponds to the cross-product (column 5, lines 43-45) of said functional states (column 4, lines 12-31) achieved by the design by multiplying the integer value of each said axis variable except the nth said axis variable by the product of the sizes of each higher-order axis than the axis to which said axis variable corresponds, summing the results, and adding the integer value of the nth said axis variable, said grid declaration (column 5, lines 33-41) also records a hit and maintains a map of hits at each linear index value determined during a simulation, and downloads said map to a database (column 1, lines 23-25); and a parser ( column 6, line 3 with figure 6 ) that translates said

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monitor ( column 5, lines 35-43) declaration (column 5, lines 33-41), said axis declaration (column 5, lines 33-41), said logic expressions, and said grid declaration (column 5, lines 33-41) into a computer program comprising a higher-order software language (column 8, lines 55-57), said parser ( column 6, line 3 with figure 6 ) further translates each said unique linear index value to a character string comprising a concatenation of character strings that correlate to said grid name and to each said functional state within said cross-product (column 5, lines 43-45) achieved by the design.

Claim 12. A method that makes a grid that monitors (column 5, lines 35-43) a design simulation (column 7, lines 34-44) to support design verification (column 8, lines 2-5) coverage analysis, comprising: providing a monitor ( column 5, lines 35-43) declaration (column 5, lines 33-41) that provides a unique name for the grid; providing n ordered axis declaration (column 5, lines 33-41) wherein n is at least 1, each said axis declaration (column 5, lines 33-41) names an axis comprising a first axis through a nth axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states (column 4, lines 12-31) of said functional attribute and has a corresponding axis variable; providing one or more logic expressions that evaluate whether the design has achieved one or more of said functional states (column 4, lines 12-31), said logic expressions set each one of said n axis variables to an integer value corresponding to said functional state when said logic expressions evaluate true; providing a grid declaration (column 5, lines 33-

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41) that converts said  $n$  axis variables to a unique linear index value that corresponds to the cross-product (column 5, lines 43-45) of said functional states (column 4, lines 12-31) achieved by the design by multiplying the integer value of each said axis variable except the  $n$ th said axis variable by the product of the sizes of each higher-order axis than the axis to which said axis variable corresponds, summing the results, and adding the integer value of the  $n$ th said axis variable, said grid declaration (column 5, lines 33-41) also records a hit and maintains a map of hits at each linear index value determined during a simulation, and downloads said map to a database (column 1, lines 23-25); and providing a parser (column 6, line 3 with figure 6 ) that translates said monitor (column 5, lines 35-43) declaration (column 5, lines 33-41), said axis declaration (column 5, lines 33-41), said logic expressions, and said grid declaration (column 5, lines 33-41) into a computer program comprising a higher-order software language (e.g., C++; column 8, lines 55-57), said parser ( column 6, line 3 with figure 6 ) further translates each said unique linear index value to a character string comprising a concatenation of character strings that correlate to said grid name and to each said functional state within said cross-product (column 5, lines 43-45) achieved by the design.

Claim 13. A method that monitors (column 5, lines 35-43) verification (column 8, lines 2-5) coverage analysis, comprising: a design simulation (column 7, lines 34-44) using a grid to support design declaring a monitor (column 5, lines 35-43) in a monitor (column 5, lines 35-43) declaration (column 5, lines 33-41) that

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provides a unique name for the grid; declaring  $n$  ordered axes using axis declaration (column 5, lines 33-41), wherein  $n$  is at least 1, each said axis declaration (column 5, lines 33-41) names an axis comprising a first axis through a  $n$ th axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states (column 4, lines 12-31) of said functional attribute and has a corresponding axis variable; evaluating one or more logic expressions to determine whether the design has achieved one or more of said functional states (column 4, lines 12-31); setting each one of said  $n$  axis variables to an integer value corresponding to said functional state when said logic expressions evaluate true; using a grid declaration (column 5, lines 33-41) that converts said  $n$  axis variables to a unique linear index value that corresponds to the cross-product (column 5, lines 43-45) of said functional states (column 4, lines 12-31) achieved by the design by multiplying the integer value of each said axis variable except the  $n$ th said axis variable by the product of the sizes of each higher-order axis than the axis to which said axis variable corresponds, summing the results, and adding the integer value of the  $n$ th said axis variable, said grid declaration (column 5, lines 33-41) also records a hit and maintains a map of hits at each linear index value determined during a simulation, and downloads said map to a database (column 1, lines 23-25); and translating said monitor (column 5, lines 35-43) declaration (column 5, lines 33-41), said axis declaration (column 5, lines 33-41), said logic expressions, and said grid declaration (column 5, lines 33-41) into a computer program comprising a higher-order software language, and translating each said

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unique linear index value to a character string comprising a concatenation of character strings that correlate to said grid name and to each said functional state within said cross-product (column 5, lines 43-45) achieved by the design.

Claim 14. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method that monitors (column 5, lines 35-43) a design simulation using a grid to support design verification (column 8, lines 2-5) coverage analysis, comprising: declaring a monitor (column 5, lines 35-43) in a monitor (column 5, lines 35-43) declaration (column 5, lines 33-41) that provides a unique name for the grid; declaring  $n$  ordered axes using axis declaration (column 5, lines 33-41), wherein  $n$  is at least 1, each said axis declaration (column 5, lines 33-41) names an axis comprising a first axis through a  $n$ th axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states (column 4, lines 12-31) of said functional attribute and has a corresponding axis variable; evaluating one or more logic expressions to determine whether the design has achieved one or more of said functional states (column 4, lines 12-31); setting each one of said  $n$  axis variables to an integer value corresponding to said functional state when said logic expressions evaluate true; using a grid declaration (column 5, lines 33-41) that converts said  $n$  axis variables to a unique linear index value that corresponds to the cross-product (column 5, lines 43-45) of said functional states (column 4, lines 12-31) achieved by the design by multiplying the integer value (column 1, lines 30-35) of



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each said axis variable except the nth said axis variable by the product of the sizes of each higher-order axis than the axis to which said axis variable corresponds, summing the results, and adding the integer value of the nth said axis variable, said grid declaration (column 5, lines 33-41) also records a hit and maintains a map of hits at each linear index value determined during a simulation, and downloads said map to a database (column 1, lines 23-25); and translating said monitor (column 5, lines 35-43) declaration (column 5, lines 33-41), said axis declaration (column 5, lines 33-41), said logic expressions, and said grid declaration (column 5, lines 33-41) into a computer program comprising a higher-order software language, and translating each said unique linear index value to a character string comprising a concatenation of character strings that correlate to said grid name and to each said functional state within said cross-product (column 5, lines 43-45) achieved by the design.


***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715, Monday-Friday (8:00 am- 4:30 pm) or contact Supervisor Mr. Leo Picard at (571) 272-3749. Central Fax number is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

July 13, 2005

THS

  
**Paul L. Rodriguez** 7/20/05  
Primary Examiner  
Art Unit 2125